

connected to a cable and having a wireless local area radio that operates in accordance with a schema that is the same as that in accordance with which the wireless local area radio of the integrator operates.

REMARKS

Claims 1-4, 7-11, 14, 15, 17, and 18 were rejected under 35 USC 102 as being anticipated by Bishop, U.S. Patent 6,377,782. Claims 5, 6, 12, 13, 6, and 19 were objected to, and claims 20-22 were allowed.

Applicants respectfully traverse the rejection but in order to expedite prosecution, a number of amendments are made in the claims.

The Bishop Reference

The Bishop reference addresses distribution of signals that flow through a hybrid fiber coax (HFC) cable. A network access interface device (NAID) -- i.e., a cable modem -- is connected to the cable, and the NAID transmits in a wireless manner to a subscriber access interface (SAID). The SAID is connected to customer devices through wired connection, or through a wireless channel. This wireless channel is depicted by an antenna with the label "REMOTE" in the various embodiments shown in FIG. 2 of the reference.

The reference describes this wireless channel only with the following:

It is preferred that the remote connection between the client devices 1 and the subscriber access interface device 10 in a wireless communication embodiment follow the Home RF or Bluetooth communication protocols, but the IEEE 802.11 protocol is also an option. The remote upstream modulated carrier 83 is demodulated to reproduce the upstream data packets 24.

Thus, the reference teaches the use of a cable modem to receive a signal from a cable that is capable of carrying broadband signals, convert the signal received from the cable to a first wireless protocol, and transmit it. The SAID receives the first protocol transmission, converts the received signal to a second wireless protocol and transmits it and, ultimately, a customer device receives the second protocol transmission. The same path, but in reverse, is used for signals that originate at the customer device and are destined to the cable.

Applicants' Disclosure

Applicants' contribution relates to the distribution, in a wireless manner, within a home or a building, the broadband signals that are received wirelessly from outside a home or a building. Applicants' further contribution is that the wireless distribution of signals

within a home or a business can, in a common protocol, interface with a cable modem (like the one described by the reference), in addition to interfacing with the fixed wireless antenna. It is believed that the advances made by applicants are reflected in the claims, as explained below.

The Claims

Claim 1 is amended herein to clarify the connection between the reference to “fixed wireless broadband access” in the preamble and the broadband signal in the first clause.

“Fixed wireless” is a term of art. It refers to systems where a subscriber is fixed to a specific cell (i.e. configured to a specific cell on a permanent basis) and effectively uses radiophones that are not mobile. A fixed wireless system is an attractive solution to implement communications in, or example, developing countries, or in rural areas of developed countries where the telecommunications infrastructure is inadequate. In essence, the term “fixed wireless,” particularly as employed in applicants’ specification and claims, specifies that signals are received from outside the home or business (such as from a cell’s base station), and are transmitted to outside the home or business.

Thus, amended claim 1 specifies a system to interface between a wireless medium outside the home or business, and a wireless medium within the home or business. It is noted that claim 1 is limited to where the fixed wireless is broadband. In other words, the system is defined to comprise a broadband radio signal transmitter/receiver that interfaces with the wireless medium outside the home or business, and an integrator that includes (a) a modulator/demodulator, and (b) a wireless local area radio that interfaces with the wireless medium within the home or business.

In contradistinction, while the SAID described by the reference has an antenna on each its two ports, the first port interacts with a wireless medium within a home or a business in a first protocol, and the second port interacts with the same wireless medium within a home or a business in a second protocol. This is different from what claim 1 specifies.

Further, the arrangement described in the reference has a cable modem that pulls a signal from the broadband signal on the cable, and the implication is that it is NOT a broadband signal. As stated by the Examiner, at the bottom of page 3 of the Office Action, “the NAID receives downstream signal from a headend and wirelessly relays the downstream signal to the appropriate SAID....” Clearly, then, the signal outputted by the

antenna of a NAID corresponds to only a portion of the signal flowing through the cable, so it is quite likely to not be a broadband signal even if the signal flowing through the cable is broadband. In any event, the reference does not teach that the signal communicated by the NAID antennas is broadband.

Still further, there is no teaching in the reference to indicate that the signal in either of the protocols is a broadband signal. Consequently, it is respectfully submitted that claim 1 is neither anticipated nor rendered obvious by the reference.

Amended claim 2 is similar to claim 1, except that it explicitly includes the fixed wireless antenna. Since no such antenna is shown or suggested in the reference, it is respectfully submitted that the added limitation of claim 2 makes the claim neither anticipated nor rendered obvious by the reference.

Amended claim 3 specifies that the wireless local area network of the integrator operates in a schema that is compatible with that of a cable modem. This makes the wireless local area radio interface of the integrator correspond to the "LOCAL" antenna interface of the reference, and it is clear that the "REMOTE" antenna interface of the reference does not correspond to the fixed wireless broadband access of claim 1. Therefore, it is respectfully submitted that claim 3 is neither anticipated nor rendered obvious by the reference.

Amended claim 4 adds an electronic device that is capable of communicating with the local area radio, which operates within a building, as well as communicating with a data communication source outside of the building. The Examiner points to col. 7, line 29 through col. 8, line 22, asserting that the client device can be either a bi-directional or a unidirectional device. The Examiner also asserts that the NAID distributes a signal to "the appropriate SAID" and the SAID further distributes the signal to the device. In applicants' view, however, a client device that receives signals from a SAID, where the SAID receives signals from a NAID, is *not the same* as a device that is adapted to receive signals from either of two different sources. Clearly, claim 4 defines a system that is neither anticipated nor rendered obvious by the reference.

Amended claim 8 is independent. Like amended claim 1, amended claim 8 more explicitly associates the "fixed wireless broadband access" of the preamble with the broadband signal conduit. It is respectfully submitted that the arguments set forth in connection with claim 1 apply to claim 8.

Claim 11 parallels claim 4, and applicants respectfully submit that the arguments set forth in connection with claim 4 apply to claim 11.

Claim 15 is an independent method claim that parallels claim 1. It is respectfully submitted that the arguments set forth in connection with claim 1 apply to claim 15.

In light of the above, it is respectfully submitted that independent claims 1, 8 and 11 are neither anticipated nor made obvious by the reference, and the same applies to all claims that depend on claims 1, 8 and 11.

This includes claim 17, which was rejected under 35 USC 103 as being unpatentable over Bishop, US Patent 6,377,782 in view of Boer US Patent 5,706,428. In connection with claim 17, the Examiner points to the Boer patent for its use of a local area antenna in communicating wirelessly. However, the patentability of claim 17, which stems from the patentability of claim 15, does not depend on whether the use of an antenna *per se* is novel.

Claims 5, 6, 12, 13, 16, and 19 were objected to for being dependent on a rejected base claim. In view of the amendments made herein, and the above remarks, it is believed that the respective base claims are allowable, and so are claims 5, 6, 12, 13, 16, and 19.

Claims 20-22 stand allowed.

In light of the above amendments and remarks, applicants respectfully submit that all of the Examiner's objections and rejections have been overcome. Reconsideration and allowance of all claims are respectfully solicited.

Lastly, included herewith is a set of formal drawings. The Examiner's approval of same is respectfully requested.

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Respectfully,
Byoung-Jo J. Kim
John Jerome Skinner

By 

Henry T. Brendzel
Reg. No. 26,844
Phone (973) 467-2025
Fax (973) 467-6589
email brendzel@comcast.net

Appendix – Marked Up Version, Showing Changes Made

In the claims

1. **(Amended)** A[n apparatus] system for integrating fixed wireless broadband access and a wireless local area radio network, comprising:

a broadband radio signal transmitter/receiver that is capable of transmitting and receiving at least one broadband radio signal belonging to said fixed wireless broadband access; and

an integrator, the integrator comprising:

an RF processing component that processes the at least one broadband radio signal;

a modulator/demodulator component for modulating/ demodulating the at least one broadband radio signal; and

a wireless local area radio for transmission and reception of the at least one broadband radio signal.

2. **(Amended)** The [apparatus] system according to claim 1, further comprising[:

a local area antenna by which the wireless local area radio transmits and receives the at least one broadband radio signal.] an antenna coupled to said broadband radio signal transmitter/receiver, where said antenna transmits said broadband radio signal to outside a building, and receives said broadband radio signal from outside a building, and said wireless local area radio is adapted to transmit and receive signals from space within said building.

3. **(Amended)** The [apparatus] system according to claim 1[, further comprising:

a power source for providing power to the integrator.] wherein said wireless local area radio transmits and receives in accordance with a schema that is the same as a schema of a network access interface device that is coupled to a cable.

4. **(Amended)** The [apparatus] system according to claim 1, where said local area radio is adapted to transmit and receive signals from space within a building, further comprising[:

] an electronic device capable of transmitting and receiving the at least one broadband radio signal to and from the [integrator] local area radio and a[n outside] data communication

source outside said building.

5. (Amended) The [apparatus] system according to claim 4, wherein such transmission and reception of the at least one broadband radio signal by the electronic device to and from the integrator and the outside data communication source is based upon at least one of a signal strength measurement and a channel interference measurement for each of the integrator and outside data communication source.

6. (Amended) The [apparatus] system according to claim 5, wherein the signal strength measurement and the channel interference measurement for each of the integrator and the outside data communication source are compared, and from this comparison a determination of whether a transmission/reception crossover should be effected is carried out.

7. (Amended) The [apparatus] system according to claim 1, wherein the at least one broadband radio signal may be either analog or digital in nature.

8. (Amended) A[n apparatus] system for integrating fixed wireless broadband access and a wireless local area radio network, comprising:

a broadband signal conduit over which communication data of said broadband access is transmitted and received; and

an integrator coupled to said conduit, [the integrator] comprising:

an RF processing component that processes the communication data;

a modulator/demodulator component for modulating/demodulating the communication data; and

a wireless local area radio for transmission and reception of the communication data.

Delete claims 9 and 10.

11. (Amended) The [apparatus] system according to claim 8, where said local area radio is adapted to transmit and receive signals from space within a building, further comprising[:

] an electronic device capable of transmitting and receiving the communication data

to and from the [integrator] local area radio and a[n outside] data communication source outside said building.

12. (Amended) The [apparatus] system according to claim 11, wherein such transmission and reception of the communication data by the electronic device to and from the integrator and the outside data communication source is based upon at least one of a signal strength measurement and a channel interference measurement for each of the integrator and outside data communication source.

13. (Amended) The [apparatus] system according to claim 12, wherein the signal strength measurement and the channel interference measurement for each of the integrator and the outside data communication source are compared, and from this comparison a determination of whether a transmission/reception crossover should be effected is carried out.

14. (Amended) The [apparatus] system according to claim 8, wherein the at least one communication data may be either analog or digital in nature.

15. (Amended) A method of integrating fixed wireless broadband access and a wireless local area radio network, comprising the steps of:

receiving a fixed wireless broadband signal from outside a building [acting as a conduit for at least one broadband radio frequency signal];

processing the at least one broadband radio frequency signal];

[modulating/demodulating] demodulating the fixed wireless broadband signal, processing the demodulated signal, and re-modulating the processed demodulated signal [at least one broadband radio frequency signal]; and

transmitting the [at least one broadband radio frequency signal] re-modulated signal between a wireless local area radio and an electronic device within said building.

16. (Amended) The method according to claim 15, wherein the step of [acting as a conduit for the at least one broadband radio frequency signal] receiving is performed on signals received by [by at least one of] an antenna, or a satellite dish [and a cable].

17. The method according to claim 15, wherein transmission of the at least one

broadband radio frequency signal between the wireless local area radio and the electronic device is through a local area antenna.

18. The method according to claim 15, wherein the steps of processing, modulating/demodulating and transmitting the at least one broadband radio frequency signal are performed by an integrator.

19. The method according to claim 18, wherein the integrator may receive a signal from the electronic device for transmission by at least one of an antenna, a satellite dish and a cable.

20. A method of integrating fixed wireless broadband access and a wireless local area radio network, comprising the steps of:

determining a signal strength and a channel interference of a first signal channel source of at least one broadband radio frequency signal;

identifying a second signal channel source for the at least one broadband radio frequency signal;

determining a signal strength and a channel interference of the second signal channel source;

determining whether the second signal channel source is better than the first signal channel source; and

effecting crossover if it is determined that the second signal channel source is better.

21. The method according to claim 20, further comprising the step of:
interrogating an electronic device to pass information relating to the at least one broadband radio frequency signal.

22. The method according to claim 20, wherein the determination of whether the second signal channel source is better than the first signal channel source is accomplished by a comparison of the signal strength and channel interference of each of the first and the second signal channel sources.

Please add the following claims: --

23. The system according to claim 1, further comprising a cable modem

Kim 113499

connected to a cable and having a wireless local area radio that operates in accordance with a schema that is the same as that in accordance with which the wireless local area radio of the integrator operates.

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